



19 CROSBY DRIVE
BEDFORD, MASSACHUSETTS 01730
617-275-2970

C-583-8-1-300
August 23, 1991

**Final Screening Site Inspection
Alling Lander Company
Cheshire, Connecticut**

**TDD No. F1-9010-03
Reference No. \$375CTA8IS
CERCLIS No. CTD098186042**

INTRODUCTION

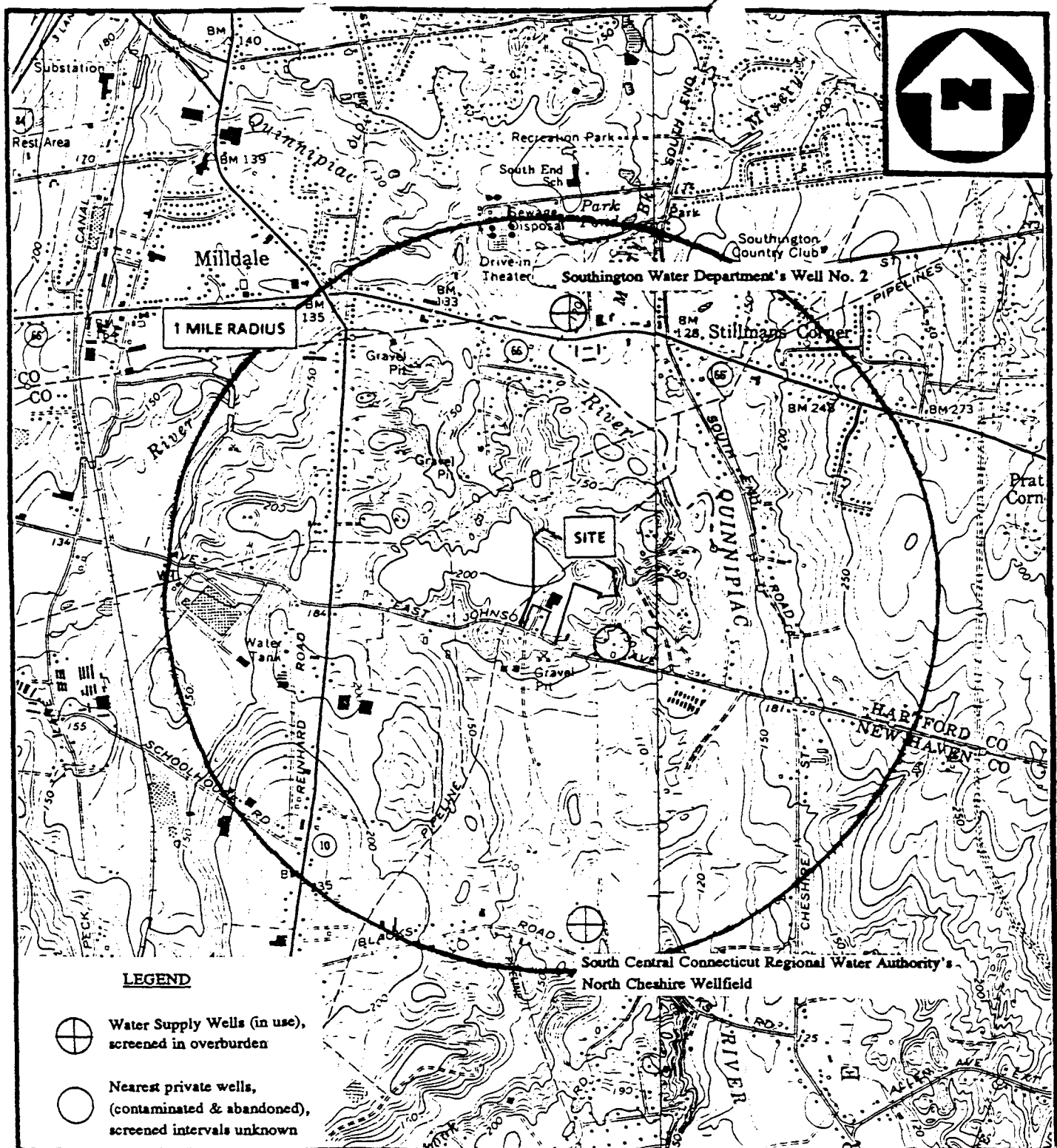
The NUS Field Investigation Team (NUS/FIT) was requested by the Region 1 U.S. Environmental Protection Agency (EPA) Waste Management Division to perform a Screening Site Inspection of the Alling Lander Company property located in Cheshire, Connecticut. All tasks were conducted in accordance with Technical Directive Document (TDD) No. F1-9010-03 which was issued to NUS/FIT on October 12, 1990. NUS/FIT Region I performed a Preliminary Assessment of this property in January, 1987. On the basis of information provided in this Preliminary Assessment, the Alling Lander Company Screening Site Inspection was initiated.

Background information used in the generation of this report was obtained through file searches conducted at the Connecticut Department of Environmental Protection and at the EPA. Information was also collected during a site visit conducted on April 10, 1991.

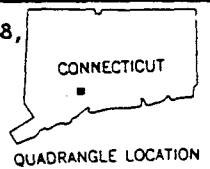
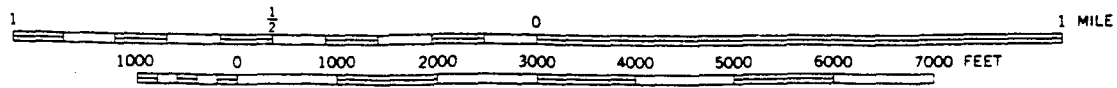
This package follows guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other federal, state, or local regulations. Screening Site Inspections are intended to provide a preliminary screening of sites to facilitate EPA's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

SITE DESCRIPTION

The former Alling Lander Company (Alling Lander) property is located at 300 East Johnson Avenue, Cheshire, New Haven County, Connecticut (Latitude 41° 33' 10" North, Longitude 73° 52' 49" West) (Figure 1) (NUS/FIT 1987; USGS 1968a). The only access barrier to the 35-acre property and its single building is a driveway gate (Figure 2) (Heynen 1984a; NUS/FIT 1990a). Alling Lander used 1,1,1-trichloroethane, trichloroethylene (TCE) and other solvents in manufacturing processes at this location (CT DEP 1984a). In December 1983, TCE, 1,1,1-trichloroethane and solvents were discovered in well water at nearby residences located on the north side of East Johnson Avenue and to the east of Alling Lander (Heynen 1984a).



Base Map is a Portion of the Following U.S.G.S. 7.5' Quadrangles: Southington, Connecticut, 1968, photorevised 1984, and Meriden, Connecticut, 1967, photorevised 1984.

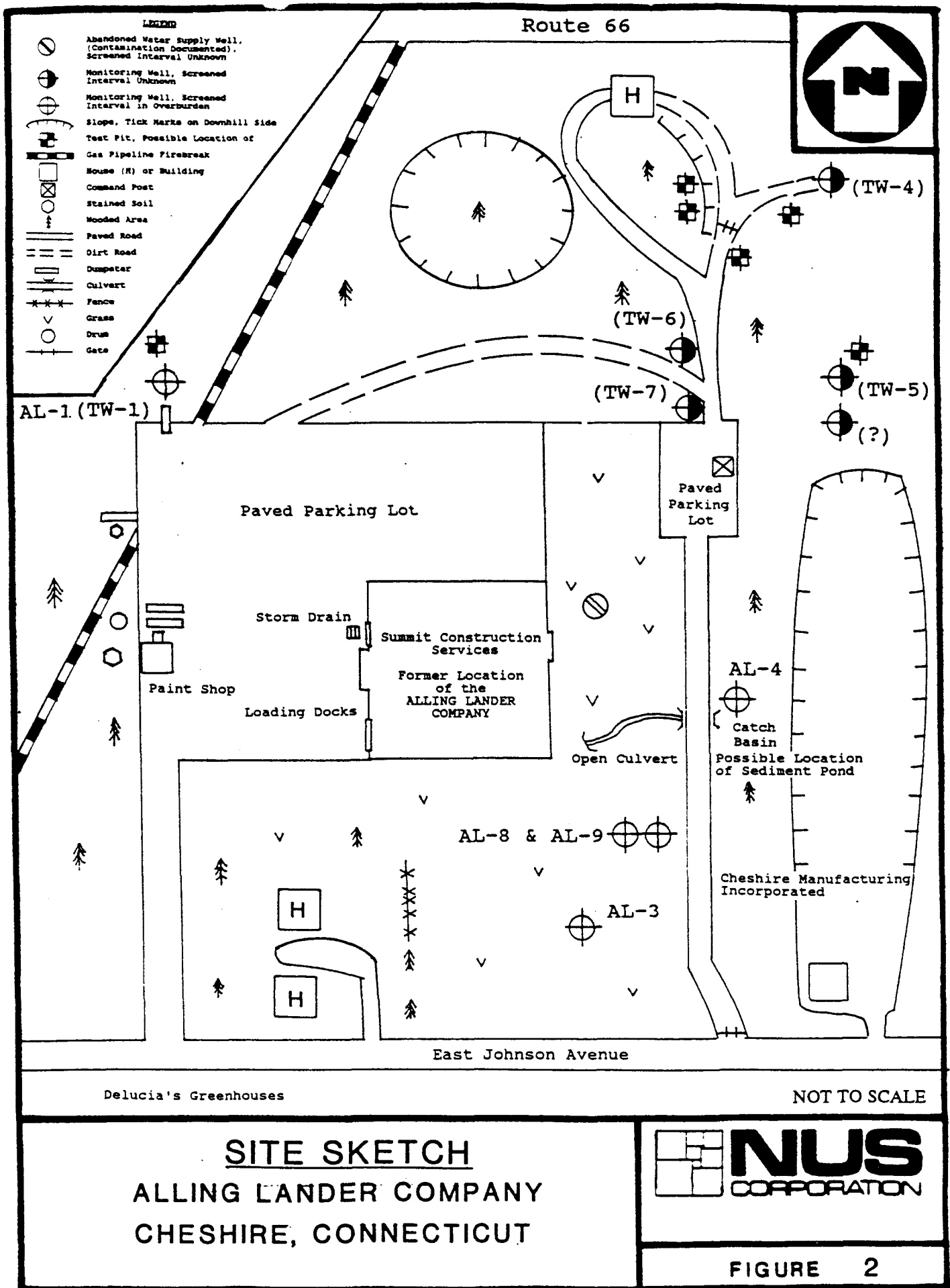


LOCATION MAP

ALLING LANDER COMPANY
CHESHIRE, CONNECTICUT



FIGURE 1



Alling Lander is bordered by woods to the north and west, Cheshire Manufacturing Associates to the east and Delucia's Greenhouses and East Johnson Avenue to the south. Two residences are located southwest of the Alling Lander property. Further to the west are residences and the Lyons Transportation facility (NUS/FIT 1990a).

Table 1 is a list of all identified and potential source areas of contamination on the property, the means by which onsite exposure to contaminants is limited or the means by which contaminants may be contained from release to air, groundwater, or surface water, and the relative location of each source area (NUS/FIT 1990a).

TABLE 1
SOURCE EVALUATION

<u>Potential Source Area</u>	<u>Containment</u>	<u>Spatial Location</u>
Storm Drain/ Open Culvert/ Catch Basin	None	Five feet northwest of facility/along east lawn/east of driveway at well
Drums	Outdoors without any containment until 1985, then under and on an intact structure, without berms	Location of historical drum storage is unknown
Dumpster for metal shavings	None	Location unknown
Solvent tank (275 gallon, above-ground)	None, removed prior to September 1984	Location unknown
Stained Soil	None	Approximately 15 feet west of paint shop; at the westernmost dumpster; also noted in 1984 at the former area of metal shavings dumpster (north lot, exact location unknown)
Contaminated Soil	Removed	Rear of Building; historical information notes the area near the metal shavings dumpster
Septic System	soil cover, depth unknown	Unknown

(CT DEP 1984a, 1984b, 1984c, 1985, 1987a, 1987b, 1987c;
NUS/FIT 1990a).

Potential sources of contamination located within 1 mile of the property include Cheshire Manufacturing Co., Inc. (Cheshire Mfg.), bordering Alling Lander to the east, and County Wide Construction (County Wide) (CERCLIS No. CTD981204217), located adjacent to Cheshire Mfg. and approximately 1,000 feet east of Alling Lander (Figure 2) (U.S. EPA 1991a; NUS/FIT 1990a; USGS 1968a). Cheshire Mfg. produces transmission oil coolers, heat exchangers and metal stampings (Commerce Register 1988). No information was available to indicate the types of wastes generated by Cheshire Mfg. County Wide does not have RCRA status, as current operations reportedly do not generate hazardous waste (NUS/FIT 1987). County Wide maintains and repairs the construction equipment associated with its home improvement business at this location (NUS/FIT 1990b). Wastes generated consist primarily of non-chlorinated organics (petroleum product constituents), waste crankcase and hydraulic oils, anti-freeze, diesel fuel from servicing or degreasing of crankcases and hydraulic equipment, and formerly, small (aerosol) cans of "Cool Tool" used for parts degreasing (NUS/FIT 1990b). Since the late 1980's, the second floor of the facility's service bay building has been leased out for use by a small printing operation which cleans its printing press with small quantities (up to one gallon) of a fluid containing chlorinated hydrocarbons and aliphatic naphthas (NUS/FIT 1990b, 1990c).

SITE ACTIVITY/HISTORY

Ownership of the property is tabulated below based on available file information:

<u>Years</u>	<u>Owner/Operator</u>	<u>Use</u>
Prior to 1962	Information unavailable	Unknown, possibly a quarry
1962-69	New England Gear Co.	Gear Manufacturing
1969-80	Robbins & Meyers, Inc.	Unknown
1980-88	Alling Lander Company	Gear Manufacturing
1984-90	Portion of Facility Leased to Sonnenschien, Inc.	Battery Distribution
1988-90	County Wide Construction & Home Improvement Co.	Home Improvement & Construction

1991 Summit Construction Services Construction

(Heynen 1984a; LGB 1984; CT DEP 1984a, 1985, Tax Assessor's 1991; NUS/FIT 1990a)

A summary of manufacturing processes and substances used at this location is presented below.

New England Gear (1962 to 1969) was involved with cutting and fitting gears and used chlorinated solvents (CT DEP 1984b). The use of the property from 1969 to 1980 could not be determined from available file information.

Between 1980 and 1988, Alling Lander manufactured metal gearboxes for overhead doors and conveyors from bronze, steel bar stock, and castings (CT DEP 1984a, 1984b, 1985). Production processes included general machining of metal (grind, drill, bore, tap, and turn). A cutting oil, "Cool Tool", which was used at full strength in two tapping machines, contains 33 percent 1,1,1-trichloroethane (CT DEP 1984a, 1984b, 1985). The manufacturer of "Cool Tool", Monroe Chemical Company, Inc., of Hilton, New York, indicated in a letter dated January 6, 1981, that Cool Tool contained the following components: petroleum oil (30-35 percent), fatty oil (30-35 percent) and chlorinated alkane (30-35 percent) (CT DEP 1991). However, according to the Materials Safety Data Sheet for "Cool Tool", the product contained 1,1,1-trichloroethane (33 percent), mineral oil (33 percent) and other unidentified contents (33 percent) (CT DEP 1991).

Alling Lander also used three Safety-Kleen degreasing units during production, and reportedly planned to replace a vapor degreaser using trichloroethylene (which was also used by New England Gear) with a new vapor degreaser which used a mixture of freon TMC and methylene chloride as of February 1985 (CT DEP 1984b, 1985). Alling Lander used lacquer paints thinned with toluol or acetone (CT DEP 1984a, 1985). The 275-gallon above-ground tank was removed from the property some time prior to September 1984, was used for outdoor storage of 1,1,1-trichloroethane until November 1983 (CT DEP 1984a, 1985).

An outdoor dumpster in which metal shavings were stored before being hauled away was kept uncovered and open; it had drainage holes from which cutting oil and other oils spilled to the ground, running off to a storm drain believed to discharge to an open culvert (CT DEP 1984a). From the culvert the oil would run off to a catch basin which is not connected to any municipal storm or sewer system; (CT DEP 1984a, 1984b, 1984c). A CT DEP inspection observed saturated and oil stained soil in the area of the metal shavings dumpster (CT DEP 1984c). In 1984, Albert Brothers hauled away scrap metal shavings they bought from Alling Lander (CT DEP 1984a, 1985).

Between 1980 and 1982, Hubbard Hall transported Alling Lander's waste solvents off the property; after 1982, EWR of Waterbury, Connecticut, began hauling Alling Lander's solvents off the property twice a year (CT DEP 1984a, 1985). Information indicates that Alling Lander occasionally mixed waste trichloroethylene (TCE) with waste oils (CT DEP 1984a, 1984c). In 1984, Detrex was reportedly contracted to haul Alling Lander's waste TCE away as long as it was segregated from the waste oil (CT DEP 1984a).

Cooling water of unknown origin was discharged directly onto the north lawn prior to December, 1983, when an active septic system began receiving cooling water via floor drains (CT DEP 1984a). Information concerning the location of the septic system and leachfield was not available. No municipal sewers were in the area in 1984 and 1985 at the time of the CT DEP inspections (CT DEP 1984a, 1985). As of 1984, a second septic system (installed in 1974) remained inactive; it had never been used and had sealed floor drains connected to the warehouse area of the building. Although the warehouse area was leased to the battery distributor, NUS/FIT was unable to confirm the use of this secondary septic system, or its location (CT DEP 1984a, 1985).

Table 2 is a list of identified hazardous substances which were or are present on the property, including the known quantities, volumes, types of source areas, and years of use or disposal.

TABLE 2
HAZARDOUS WASTE QUANTITY

<u>Waste Type</u>	<u>Quantity</u>	<u>Years of Use</u>	<u>Source Area</u>
Chlorinated Solvents	unknown	1962-1968 1980-1988	Metal Shavings Dumpster
Waste TCE	12 drums per year	1980-1984	Drums
TCE stillbottoms	unknown	1980-1984	Dumpster
"virgin" 1,1,1-tri-chloroethane	1,000-1,500 gallons/year	1980-1983	Solvent Tank
"Cool-Tool" Cooling Oil	400 gallons/year 120 gallons/year 150 gallons/year	1982-1984 1984-1985 1985	Drums, Metal Shavings Dumpster
Waste "Cool Tool"	2-8 drums/month	1980-1985	Drums

(cont'd)

TABLE 2 (cont'd)
HAZARDOUS WASTE QUANTITY

<u>Waste Type</u>	<u>Quantity</u>	<u>Years of Use</u>	<u>Source Area</u>
Cooling Oil Drained from Sludge Grindings	1-2 drums/year	?-1985-?	Drums, Metal Shavings Dumpster
Waste oil, contaminated chlorinated solvents and trichloroethylene	150 gallons/year	?-1985-?	Drums
Waste oil, with and without chlorinated solvents	2-8 drums/month	?-1985-?	Drums, Storm Drain/ Open Culvert/ Catch Basin
Speedi-Dry Sorbant, contaminated with waste oil and 1,1,1-trichloroethane	1 drum	1985	Drum
Spent Paint Thinner (DOO1)	less than 1 drum/year	?-1985-?	Drums
Waste freon/ methylene chloride mixture	1 drum per 1-2 months	1985-1988	Drums
Cooling water	unknown	1980-1983 1984-1988	North Lawn Septic System
Toluol	unknown	1980-1988	Drums
Acetone	unknown	1980-1988	Drums
Epoxy Paints	unknown	1980-1988	Unknown
Lacquer Paints	unknown	1980-1988	Unknown

(ALC 1984, 1985; CT DEP 1984a, 1984b, 1984c, 1985)

Previous Work at the Site:

1983-1986

Samples of process products, waste by-products, soil, and groundwater have been collected from the Alling Lander and nearby properties by several agencies on numerous occasions; samples were

collected and analyzed for volatile organic analyses by the following: the South Central Connecticut Regional Water Authority (SCCRWA) (with analyses through the Chesprocott Health District), the CT DEP Water Compliance Unit (with analyses through the CT Department of Health Services), and by Heynen Engineers (with analyses through Industrial Corrosion Management, Inc.) (Heynen 1984a).

- 1984 Installation of monitoring wells in the overburden at the Alling Lander property between February 28 and March 6 was completed by Connecticut Test Borings for Heynen Engineers (see Attachment A) (CTB 1984a, 1984b, 1984c, 1984d, 1984e; Heynen 1984a; LBG 1984). Well AL-1 was located at the northwest corner of the property, well AL-2 was near the "shed", well AL-3 was near the southern residential neighbor's property line, well AL-4 was at the end of the culvert near the entrance drive, and well AL-5 was located in woods west of County Wide (Heynen 1984a).
- 1984 A hydrogeologic and engineering report relating to the property of Alling Lander was completed by Heynen Engineers; the report includes results of soil, groundwater and industrial and domestic supply well sampling for volatile organic compounds (VOCs) conducted over a several month period (Heynen 1984a).
- 1985 Alling Lander discontinued the use of Cool Tool and began using "W & B Cutting Oil 2190 (W&B). W&B is manufactured by White & Bagley Co. of Worcester, Massachusetts. W&B is a non-hazardous material and it would not be considered regulated as a RCRA hazardous waste if disposed. However, the material may be considered a Connecticut regulated waste under statute if disposed (CT DEP 1991).
- 1986 Dames & Moore installed two monitoring wells (designated AL-8 & AL-9) adjacent to each other on the property; one was screened between 100 to 160 feet deep, and the other was screened between 40-60 feet above bedrock. These wells were sampled by Dames & Moore personnel for VOC analyses by Environmental Laboratories, Inc on May 16 and by SCCRWA personnel for VOC analyses on June 2 (Dames & Moore 1986; Sharp & Berger 1986a, 1986b).
- 1987 Alling Lander was given acknowledgment of full compliance with Consent Order WC4516, (issued on May 5, 1987) which required removal of contaminated

soil from the roll-off container areas and catch basins, and the provision of long-term water supplies to users of nearby contaminated wells in the form of extending a SCCRWA water main to those residents whose wells were found to be contaminated (CT DEP 1987a, 1987b). Further information regarding this activity is unavailable to NUS/FIT.

1991 NUS/FIT personnel conducted a site reconnaissance of the property on April 17, 1991 (NUS/FIT 1990a). At this time, NUS/FIT personnel, although unable to locate the AL-2 well reportedly near the shed, documented the location of additional monitoring wells, some of which were observed to be marked with the letters "TW" (NUS/FIT 1990a). The origination and installation histories of these other wells, (except for the two wells installed by Dames & Moore), were not available in file information (NUS/FIT 1990a). No information was available regarding the test pits shown on Figure 2 which NUS/FIT personnel observed during the site reconnaissance.

Permits held since the Alling Lander Company began operations at this location are summarized below:

On February 29, 1984, a 30 day Temporary Hazardous or Controlled Waste Disposal permit (#PTP-000001032) was issued to Alling Lander by CT DEP to allow for the disposal of trichloroethylene (TCE), waste oil, TCE contaminated waste oil, and fuel oil tank water/sludge mixture by the state licensed waste haulers EWR, Detrex and RAYMAR (ALC 1984).

In 1986, Alling Lander requested a status change to a small quantity generator (CT DEP 1986a). On July 1, 1987, Alling Lander provided EPA with a Notification of Hazardous Waste Activity statement acknowledging its generation of less than 1,000 kilograms per month of materials in an application for an EPA identification number (U.S. EPA undated, 1991a). Alling Lander had been assigned EPA identification number CTD098186042 in 1988 when the CT DEP requested that Alling Lander sign a Certification Statement prior to official approval of the status change (CT DEP 1988f). Alling Lander's RCRA status is that of a small quantity generator; it has no RCRA status as a treatment, storage or disposal facility and holds no National Pollution Discharge Elimination System Permit (U.S. EPA 1991a, 1991b, 1991c, 1991d).

Based on sample collection and analysis, which provided evidence of uncontrolled hazardous waste disposal from the property, the CT DEP issued to Alling Lander on December 19, 1983, an Order to Abate Pollution (Order No. 3652), and on January 26, 1984, issued Alling Lander an Order to Provide

Potable Drinking Water (Order No. 3679) (CT DEP 1983b, 1984e). The Order to Abate Pollution required Alling Lander to investigate the extent and degree of groundwater, surface water and soil contamination from chemical storage handling and disposal activities at 300 East Johnson Avenue, to take the necessary remedial actions to minimize or eliminate the contamination resulting from such practices, and to implement a plan to provide for best management practices for chemical storage, handling and disposal (CT DEP 1983b). Alling Lander Company changed its corporate name to TPB Corporation (TPB) on June 20, 1986 (CT DEP 1991). On May 5, 1987, a Consent Order (Order No. WC4516) was issued to TPB (CT DEP 1987b). The Consent Order revoked both Order No. 3652 and Order No. 3679 as of that date (CT DEP 1987a, 1987b, 1987c, 1991). As part of the Consent Order, Alling Lander agreed to remove solvent contaminated soil from the catch basins and the roll-off container area and to provide a long-term potable drinking water supply, which meets the standards for drinking water established by the commissioner of Health Services, to the following properties: Caroline Zalenski (Assessor's Map No. 12, Lot No. 8), County-Wide Home Improvement & Maintenance (Assessor's Map No. 12, Lot No. 10) and Mary M. Bennett (Assessor's Map No. 12, Lot No. 10) (CT DEP 1987b).

On several occasions between 1987 and 1988, the CT DEP returned to Alling Lander improperly completed hazardous waste transport manifests for corrections (CT DEP 1987d, 1988a, 1988b, 1988c).

In 1988, Alling Lander failed to submit the 1987 Large & Small Quantity Generator Hazardous Waste Biennial Report to CT DEP in a timely manner (CT DEP 1988d). After Alling Lander submitted the report, the CT DEP returned it to them for corrections because some of the required information was either missing or incorrect (CT DEP 1988e).

Due to the availability of analytical data, the EPA decided that further sampling by NUS/FIT during its screening site inspection was not necessary at this time.

ENVIRONMENTAL SETTING

Land use within 0.5 miles of the property is rural, consisting of farmland, woods, private residences, and a few commercial industries. The remainder of the area within 1 mile of the site is primarily residential (NUS/FIT 1987). Two occupied residences are adjacent to the property at a south-southwest orientation (see Figure 2). The industrial supply well located at the Alling Lander facility was found to be contaminated with VOCs, as was the nearest domestic water supply well (CT DEP 1984a, 1987b; CT WRC 1962; Heynen 1984b). This domestic well is located at the residential property adjacent to and east of Cheshire Manufacturing Associates (CT DEP 1987b; Heynen 1984b). The facility is

located on a kame-delta deposit, (a flat-topped, lobate deposit of sand and gravel formed in a glacial lake) (CT DEP 1986b; Heynen 1984a). Soils at this location are described as coarse-grained stratified drift overlying finer-grained lake bottom deposits, deposited by or in glacial meltwaters (CT DEP 1986b; Heynen 1984a).

The bedrock geologic formation beneath this property is New Haven Arkose (Heynen 1984a). There are no outcrops present at this location (Heynen 1984a). The well completion report for the industrial supply well installed for New England Gear on April 16, 1962 notes that following penetration through 210 feet of fine sand, a "Red Rock" formation was drilled into down to 500 feet below grade (CT WRC 1962).

In February 1985, HRP Associates Inc. completed a hydrogeological study of another nearby property owned and operated by County Wide at 340 East Johnson Avenue, located approximately 1,000 feet east of the Alling Lander property (HRP 1985). Well logs generated during the investigation suggest the presence of a northwest to southeast trending "trench" in the bedrock crossing the southern perimeter of the County Wide site (HRP 1984). This trench appears to coincide with a topographic channel which also occurs in this vicinity (HRP 1984). The South Central Connecticut Regional Water Authority's (SCCRWA) North Cheshire Wellfield, located on the north side of Black's Road in Cheshire, is located 0.9 miles south of and in the same bedrock valley as the Alling Lander property (CT DEP 1991; LBG 1984).

At Alling Lander, Heynen Engineers measured the depth to the water table following the drilling of five borings into overburden, four on the property and one in the woods east of County Wide Construction (Heynen 1984a). Measurements of the depths to the water table were collected upon installation of the wells and several times afterwards; the averaged depths to groundwater at each of the locations are summarized in the table below.

Average Depth to Groundwater (in feet)

Boring No.	<u>AL-1</u>	<u>AL-2</u>	<u>AL-3</u>	<u>AL-4</u>	<u>AL-5</u>
Feet	82.1	75.21	71.0	67.8	43.3 (Heynen 1984a)

The groundwater flow direction under the property is from west to east in the stratified drift towards the Quinnipiac River, although pumping at the Cheshire Wellfield on Black's Road could skew groundwater flow southward (CT DEP 1986b; Heynen 1984a).

The total estimated population served by groundwater sources (both public and private) within 4 miles of Alling Lander is

82,434 (CT DEP 1982, 1986c, Demers 1990b, 1990c, 1990d, 1990e, 1990f, 1990g, 1990h, 1990i, 1990j, 1991a, 1991b, 1991c; Felitti 1985a; Maguire Group 1990; SCCRWA 1989; Tisdale 1990; Weiss 1989a).

Tables 3 and 4 summarize the public and private drinking water sources within 4 miles of Alling Lander, respectively.

TABLE 3
PUBLIC WATER SUPPLY SOURCES WITHIN 4 MILES
OF ALLING LANDER

<u>Distance/ Direction From Property (in miles)</u>	<u>Source Name/ Location</u>	<u>Estimated Population Served</u>	<u>Source Depth, Type</u>
0.75 N	Southington Well # 2 Southington	5,029	67 feet deep, in stratified drift
0.9 S	No. Cheshire Wellfield Cheshire	14,022	#1 = 92 feet, #2 = 77 feet, in stratified drift with use of three wells discontinued
2.1 N	Southington Well # 5	n/a	Use Discontinued
2.4 SW	Greenshire School	n/a	Use Discontinued
2.7 N-NE	Southington Well # 7 Southington	5,029	93 feet deep in stratified drift
2.7 N-NE	Southington Well #8 Southington	5,029	59 feet deep in stratified drift
3.0 SE	Dossin Beach Well	n/a	Use Discontinued
3.0 SE	Platt Street Meriden	4,929	52 feet deep, filter packed
3.1 SE	Lincoln Well Meriden	5,830	77 feet deep, filter packed
3.2 SE	Cuno Well	n/a	Use Discontinued
3.5 N	Southington Well # 1A Southington	5,029	67 feet deep, stratified drift
3.6 W	Blueberry Hill Apts.	n/a	Use Discontinued

TABLE 3 (cont'd)
PUBLIC WATER SUPPLY SOURCES WITHIN 4 MILES
OF ALLING LANDER

Distance/ Direction From Property (in miles)	Source Name/ Location	Estimated Population Served	Source Depth, Type
3.7 W	Alma Properties	n/a	Use Discontinued
3.65 SE	Evansville Ave. East 80 feet deep, Meriden	9,805	filter packed
3.65 SE	Evansville Ave. West Meriden	9,805	62 feet deep, filter packed
3.8 WSW	Mayview Ave. Community	n/a	Use Discontinued
3.85 WSW	New Lakeview Convalescent Home Cheshire	370	6 Wells**
3.88 WSW	Lakeview Apartments	19	425 feet deep, bedrock well
3.9 W-SW	Hillview Well Cheshire	37	12 feet deep, dug well
3.95 E	Columbus Park Meriden	3,922	72 feet deep, filter packed
3.99 N	Southington Well #3 Southington	5,029	70 feet deep, stratified drift
3.99 E	Mule Wellfield Meriden	<u>1,961</u>	39.5 feet deep, 10 foot screen
Total =		75,845	

Notes: N/A = Not available
 ** = #1 drilled, 16 feet deep, dried up (down)
 #2 gravel packed, 17 feet deep
 #3 drilled, 305 feet deep (slow)
 #4 Gravel packed, 16 feet deep, (main supply)
 #5 Drilled, 290 feet deep, (slow)
 #6 Drilled, 146 feet deep, (> 7-8 gal/min.)

(CT DEP 1982, 1986c; Demers 1990b, 1990c, 1990d, 1990e, 1990f, 1990g, 1990h, 1990j, 1991a, 1991b, 1991c; Felitti 1985a; Maguire Group 1990; SCCRWA 1989; Tisdale 1990; Weiss 1989a).

In 1979, 1,1,1-trichloroethane was first discovered in the North Cheshire Wellfield (NUS/FIT 1987). An aeration tower at the wellfield (completed in 1986) effectively removes 99 percent of the TCA from the contaminated water (Demers 1989).

TABLE 4
PRIVATE WATER SUPPLIES WITHIN A 4-MILE
RADIUS OF ALLING LANDER

<u>Distance Ring</u>	<u>Estimated Number of Private Well Users</u>
0.00 - 0.25 miles	29
0.25 - 0.50 miles	89
0.50 - 1.00 miles	274
1.00 - 2.00 miles	970
2.00 - 3.00 miles	1,640
3.00 - 4.00 miles	3,587

TOTAL ESTIMATE 6,589

(CT DEP 1982, 1986c; Demers 1990b, 1990c, 1990d, 1990e, 1990f, 1990h, 1990i, 1990j, 1991a, 1991b, 1991c; Maguire Group 1990; SCCRWA 1989; Tisdale 1990; USGS 1967a, 1967b, 1967c, 1968a, Weiss 1989a).

The locations of some of the private wells within approximately 0.5 miles of Alling Lander are known; private wells are located at #251, #261, #272, #300, #312, #340, #344, #368, #441, and #443 East Johnson Avenue, however the screened intervals for these wells were not available (Demers 1990k, SCCRWA 1985).

Water from private wells on three properties (the Bennett (#340), County Wide (#344) and Zalenski (#368) properties) located approximately 0.2 miles southeast of Alling Lander along East Johnson Avenue, were found to contain VOCs. These wells were subsequently abandoned and in 1984, Alling Lander, as required by a CT DEP Order, supplied these residences with bottled water (CT DEP 1984e, 1987b, 1984b; Heynen 1984b; SCCRWA 1985, USGS 1968a). In the Consent Order No. WC4516, Alling Lander agreed to provide long-term water supplies to these three properties by extending a SCCRWA water main to them, by properly abandoning their contaminated supply wells, and by providing for connections to the water main by September 30, 1987 (CT DEP 1987b). Full compliance with Consent Order No. WC4516 was acknowledged in writing on November 17, 1987 (CT DEP 1987a).

Immediately underlying the property, the groundwater classification is Class GB/GA; the area to the south is Class GB/GAA and the other adjacent areas are Class GA (CT DEP 1991).

The surface water drainage route follows the southeasterly

sloping topography of the property. Surface water flowing into a storm drain at the loading dock area on the northwest side of the facility is presumed to lead to the discharge culvert off the southeast corner of the facility. The discharge is into an open depression, or drainage swale, located on the east lawn of the property. The drainage swale leads to a culvert which passes under the facility's east driveway at the AL-4 monitoring well location. Surface water travelling through the culvert empties into a soggy, leaf-covered, and bermed catch basin (NUS/FIT 1990a).

The nearest downgradient surface water body is the Quinnipiac River, located approximately 0.4 miles east-southeast of Alling Lander; it flows south from there and continues beyond the 15-mile downstream point from the property, which is at a sewage treatment plant in North Haven (USGS 1967a, 1967c, 1968a). The Quinnipiac River is used for irrigation at points along its course near Honeypot Brook (Felitti 1985b). Honeypot Brook is located west of the Quinnipiac River and 1,000 feet northeast of Black's Road in Cheshire; it is not on the surface water pathway (USGS 1968a). The Quinnipiac River receives limited recreational use (in the form of canoeing) (Kasten 1986). Swimming in the Quinnipiac River is uncommon; in dry seasons during summer and winter, most of the Quinnipiac River's base flow is from sewage treatment plants (Demers 1990a).

Boaters use Hanover Pond, located on the Quinnipiac River and approximately 4.25 downstream miles from Alling Lander (USGS 1967a, 1968a; Weiss 1989b). The Quinnipiac River's surface water quality is designated by the CT DEP Water Compliance Unit's Water Quality Standard as Class C/B_c; this changes to Class SC/SB approximately 14 miles downstream and remains so until the Quinnipiac River drains into New Haven Harbor approximately 20 miles downstream of the property (CT DEP 1990). There are no known public drinking water supply intakes within 15 miles downstream of Alling Lander (CT DEP 1982; 1986c; USGS 1967a, 1967b, 1968a).

Flood frequencies and flow rates of the Quinnipiac River along the 15 mile downstream surface water pathway are unknown based on available file information. The total wetlands frontage along the 15 mile downstream surface water pathway of the property is approximately 23.6 miles (U.S. DOI 1977a, 1977b, 1977c). Along the surface water pathway are the following designated recreational and wildlife areas: Walco Park, located 14 miles downstream from the property; and the Quinnipiac River State Park, located 14.5 miles downstream from the property (USGS 1967a, 1967c, 1968a). Agricultural farmlands are located 0.3 miles east and from between approximately 0.2-0.6 miles south and southeast of the property (NUS/FIT 1990a, 1990c; USGS 1967a, 1968a).

There are no known extant populations of Federal Endangered

and Threatened Species within a 4-mile radius or within 15 miles downstream of the property (Ross 1985). No public recreational areas were observed in the immediate vicinity of the property (NUS/FIT 1990a, 1990c).

RESULTS

The following is a discussion of previously collected analytical results provided to NUS/FIT by the CT DEP Hazardous Waste Management Section.

On November 8, 1983, personnel from the CT DEP Water Compliance Unit (WCU) collected samples of waste oil stored in drums and machine coolant used in process equipment at Alling Lander for quantitative analysis by the Connecticut Department of Health Services (CT DOHS) (Attachment B) (CT DEP 1983a). Additional samples of soil and groundwater were collected on various occasions during 1983 from the property and in nearby private water supply wells for VOC analysis by Heynen Engineers (and analyzed by Industrial Corrosion Management, Inc (ICM)), the WCU (and analyzed by the CT DOHS), and the Chesprocott Health District (for analysis by the SCCRWA) (Heynen 1984a).

The following table summarizes the results of sample analyses performed on four categories of samples collected during previous investigations: bulk samples of waste oil and machine coolant, soil/sludge samples, groundwater samples collected on the Alling Lander Property, and groundwater samples collected from the nearby water supply wells. The samples in Table 5 represent the maximum concentrations detected in each of the four types of samples. If applicable, the degree to which the concentration of a compound in a groundwater sample exceeds an established Maximum Contaminant Level (MCL) is noted. The sample media, sample type and location, collection date, compounds detected, concentrations, and the attachments containing the referenced materials are given in the table.

Five VOCs (1,1,1-trichloroethane, trichloroethylene, "1-dichloroethane" [sic], methylene chloride, and tetrachloroethylene) were found at the highest concentrations detected in the soil sample collected by WCU on November 8, 1983 from the rear of the property (CT DOHS 1983b). This sample also contained (cis)1,2-dichloroethene, mixed xylenes, and toluene (CT DOHS 1983b). Of the eight VOCs detected in the soil sample, five of them (1,1,1-trichloroethane, trichloroethylene, tetrachloroethylene, toluene and mixed xylenes) were also detected in the analysis of Alling Lander's process by-product waste oil (CT DOH 1983a).

Toluene and mixed xylenes, the remaining VOCs detected in the analysis of the bulk waste oil sample, were detected at their highest concentrations on the property at two different soil

TABLE 5
SAMPLE SUMMARY FOR COMPOUNDS DETECTED ON OR NEAR THE ALLING LANDER PROPERTY

SAMPLE MEDIA	SAMPLE TYPE, LOCATION & NUMBER	DATE COLLECTED	COMPOUND	CONCENTRATION	ATTACHMENT/ MCLs
Bulk Samples	Waste Oil 1906	1-9-84	1,1,1-trichloroethane trichloroethylene mixed xylenes toluene tetrachloroethylene	<8,600,000 ug/l> <1,500,000 ug/l> <20,000 ug/l> <10,000 ug/l> <7,500 ug/l>	B
Sludge/Soil	Six Inch Grab Sample from Rear of Property 30757	11-8-83	1,1,1-trichloroethane trichloroethylene 1-dichloroethane [sic] methylene chloride tetrachloroethylene	53,000 ug/Kg 1,300 ug/Kg 600 ug/Kg 600 ug/Kg 100 ug/Kg	C
	Grab Sample from Catch Basin Near Loading Dock 33434	12-8-83	(cis)1,2-dichloroethene	560 ug/Kg	D
	Grab Sewage Sample from Septic Tank 34160	12-19-83	mixed xylenes	40 ug/l	E
	Composite Sample from Alling Lander Sediment Pond 34163	12-19-83	toluene	260 ug/Kg	E, F
	"Soil/Sludge" from Catch Basin in Rear of Building	2-3-84	(t)1,2-dichloroethylene [sic] vinyl chloride	180 ppb 118 ppb	F
Groundwater (Alling Lander)	Monitoring Well AL-2 8505	4-2-84	trichloroethylene 1,1,1-trichloroethane 1,1-dichloroethene	50 ug/l 100 ug/l <10 ug/l>	G MCL = 5 ppb MCL = 200 ppb MCL = 70 ppb
Groundwater (Private Wells)	342 East Johnson Avenue (County Wide) C-29	6-19-84	1,1,1-trichloroethane	18 ppb	H MCL = 200 ppb
	344 East Johnson Avenue (Dube) 27618	10-4-83	trichloroethylene tetrachloroethylene	1,500 ppb 5 ppb	I MCL = 5 ppb MCL = N/A

<n> = The compound's peak area detected during analysis; ug/l = micrograms per liter;

ug/Kg = micrograms per kilogram; ppb = parts per billion

(CT DOH 1983a, 1983b, 1983c, 1983d, 1983e, 1984, Heynen 1984a, 1984c, SCCRWA 1984)

sample locations. Toluene (toluol) was detected at a concentration of 260 ug/l in the soil sample collected from the Alling Lander sediment pond (location unknown) and mixed xylenes were detected at 40 ug/Kg in the sludge sample collected from the septic tank (location unknown) (CT DOHS 1983c).

Similar types of VOCs were detected in both the waste oil and the soil sample collected from the rear of the property in the area of the Alling Lander's waste metal shavings storage dumpster. In addition, the CT DEP observed waste cooling oil leaking from drain holes in the bottom of the dumpster. It is possible that these component compounds of process materials used by Alling Lander may have run off from the dumpster area to enter the sediment pond and the septic system.

Samples collected from the catch basin near the loading dock, the culvert outfall, the PVC drain discharge, the sediment pond, and the septic tank were also found to contain some of the same types of VOCs which were found during analysis of bulk samples of Alling Landers' waste oil and machine coolant but at lower concentrations; these include trichloroethene, 1,1,1-trichloroethane, toluene, and mixed xylenes (CT DOH 1983c, 1983b, 1983c; Heynen 1984a).

Methylene chloride and tetrachloroethylene are two additional VOCs present at the highest concentrations detected on the property in the sample collected from near the metal shavings dumpster at the rear of the property (CT DOH 1983b). Both of these compounds are known to be used by Alling Lander and by New England Gear Co. in their operations (CT DEP 1984a, 1985).

Based on available information, vinyl chloride, (t)1,2-dichloroethene, chloroform, and (cis)1,2-dichloroethene are VOCs whose presence in soil samples cannot be directly connected to any process products or waste by-products known to be used by Alling Lander. However, all of these VOCs listed, with the exception of chloroform, can be degradation products of 1,1,1-trichloroethane and trichloroethylene (U.S. EPA 1991d). Both trichloroethylene and 1,1,1-trichloroethane may degrade or transform directly into (cis)1,2-dichloroethene or (t)1,2-dichloroethene, either of which may then degrade into vinyl chloride (CT DEP 1991). The possible source of chloroform remains unknown (CT DEP 1991).

The detection of trichloroethene, 1,1,1-trichloroethane, and 1,1-dichloroethene on the property at maximum concentrations in the AL-2 groundwater monitoring well (location unknown) may be attributable to improper disposal practices on the property.

In 1983, four wells (with unknown screening intervals) in the

immediate vicinity (including the Alling Lander supply well and private wells, most on the north side of East Johnson Avenue and east of Alling Lander), were found to contain trichloroethylene, 1,1,1-trichloroethane and other VOCs (CT DEP 1984b; Heynen 1984a).

Groundwater samples collected from the AL-2 monitoring well on the property on April 2, 1984 revealed the highest concentrations at which the VOCs 1,1,1-trichloroethane (at a concentration of up to 100 ppb) and trichloroethene (at up to 50 ppb) were detected during groundwater sampling of the property (Heynen 1984c). The Maximum Contaminant Level for 1,1,1-trichloroethane is 200 ppb and is 5 ppb for trichloroethene (NARA 1989).

SUMMARY

Alling Lander Company (Alling Lander) occupied the single story building located on 35 acres of property at 300 East Johnson Avenue in Cheshire Connecticut between 1980 to 1988. Chlorinated solvents, including 1,1,1-trichloroethane, trichloroethylene, and other volatile organic compounds were used in manufacturing processes (which included metal machining) at this location by Alling Lander. In addition, former property owners also generated hazardous waste similar to Alling Lander. Alling Lander used a cutting oil in its metal machining operations which contained 33 percent 1,1,1-trichloroethane. Their outdoor dumpster (used for waste metal shavings storage) had drainage holes at the lower corners which allowed cutting oil and other oils to spill to the ground, saturate the soil, and run-off to a catch basin/storm drain not connected to any municipal storm or sewer system. Cooling water (origin unknown) was discharged directly onto the north lawn prior to December 1983, when an active septic system began receiving cooling water via floor drains. With no municipal sewer in the area, all industrial and sanitary discharges were routed to the active septic system.

In December 1983, trichloroethylene, 1,1,1-trichloroethane and other volatile organic compounds were discovered in the Alling Lander supply well and in well waters of nearby residences to the southeast of Alling Lander.

Samples collected from stained soil at Alling Lander indicated the presence of volatile organic compounds (VOCs) used by Alling Lander, including 1,1,1-trichloroethane (at concentrations up to 53 parts per million, and trichloroethene (at up to 1,300 parts per billion (ppb)). A groundwater sample collected from the property's monitoring well AL-2 contained 1,1,1-trichloroethane at concentrations up to 100 ppb, and trichloroethylene at up to 50 ppb. The concentration of 50 ppb is 10 times above the established Maximum Contaminant Level for this compound of 5 ppb (NARA

1989).

Removal of contaminated soils was performed as a result of CT DEP's issuance to Alling Lander on May 5, 1987, a Consent Order (No. WC4516) requiring this action. Further details regarding this activity were unavailable to NUS/FIT.

The North Cheshire Wellfield, currently being remediated by air stripping due to VOC contamination, and serving approximately 14,022 persons, is located 0.9 miles south-southeast of Alling Lander. A Southington Water Department Well (#2) serving an estimated 5,029 persons, is located 0.75 miles north of Alling Lander. Within a 4-mile radius of the property, municipal and private water supplies are estimated to serve approximately 82,434 individuals. There are approximately 23.6 miles of wetlands frontage along the 15-mile downstream surface water pathway. Agricultural lands are located less than 0.5 miles across East Johnson Avenue to the south and also to the east.

Based on the presence of documented soil and groundwater contamination and its proximity to agricultural lands and public and private water supply wells, NUS/FIT recommends that continued investigative work under CERCLA be conducted at this property.

Submitted by:

David J. Demers
David J. Demers
Project Manager

Approval: *Janet Pillin for*

Robert Jubach
FIT Office Manager

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Weiss, J. 1989a. Telecon between J. Weiss (NUS/FIT) and J. Geis (Southington Water Department) RE: Surface Water Sources, TRW DOT Fastener Division, TDD No. F1-8901-13. September 25.

Weiss, J. 1989b. Telecon between J. Weiss (NUS/FIT) and Clerk
(Meriden Park and Rec. Dept.) RE: Uses of Hanover Pond, TRW
DOT Fastener Division, TDD No. F1-8901-13. September 27.

LIST OF ATTACHMENTS

- Attachment A: Alling Lander Company, Well Logs, Connecticut Test Borings February 28 - March 6, 1984
- Attachment B: Alling Lander Company, Bulk Sample Results, a. Waste Oil, b. Machine Coolant, Connecticut Department of Health, January 9, 1984
- Attachment C: Alling Lander Company, Soil Sample Results, Connecticut Department of Health, November 8, 1983
- Attachment D: Alling Lander Company, Soil/Sludge Sample Results, a. Septic Tank, b. Catch Basin Near Loading Dock, Connecticut Department of Health, December 8, 1983
- Attachment E: Alling Lander Company, Soil Sample Results, a. Culvert Outfall, b. Sediment Pond, Connecticut Department of Health, December 19, 1983
- Attachment F: Hydrogeologic and Engineering Report Relating to the Property of Alling-Lander Company 300 East Johnson Street, Cheshire, Connecticut. Heynen Engineers, Clinton, Connecticut. March 1, 1984
- Attachment G: Alling Lander Company, Groundwater Sample Results for Wells on East Johnson Avenue, Connecticut Department of Health Services, Laboratory Division, 1984
- Attachment H: Alling Lander Company, Groundwater Sample Results for Wells on East Johnson Avenue South Central Connecticut Regional Water Authority, 1984-1986
- Attachment I: Alling Lander Company, 344 East Johnson Avenue, Groundwater Sample Results, South Central Connecticut Regional Water Authority, October 4, 1983